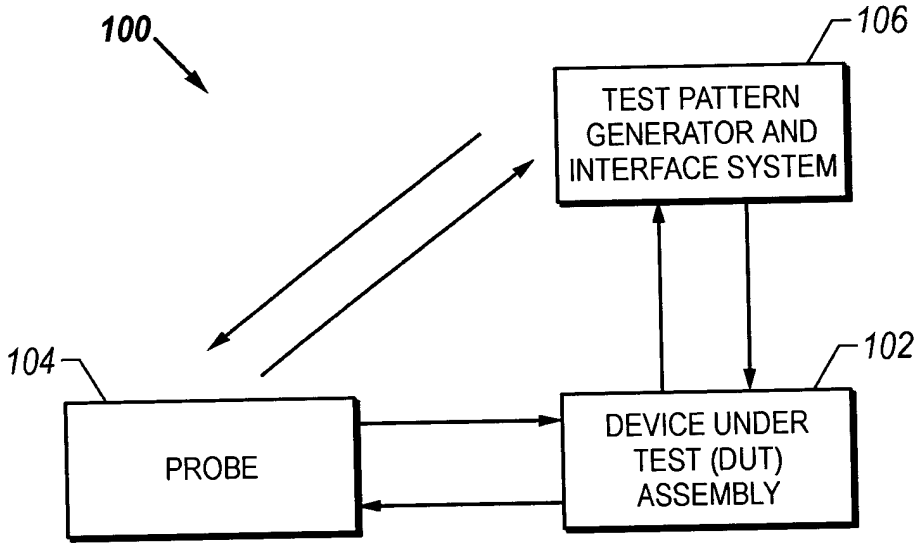
100
106
TEST PATTERN GENERATOR AND INTERFACE SYSTEM
104
102
PROBE
DEVICE UNDER TEST (DUT) ASSEMBLY

FIG. 1

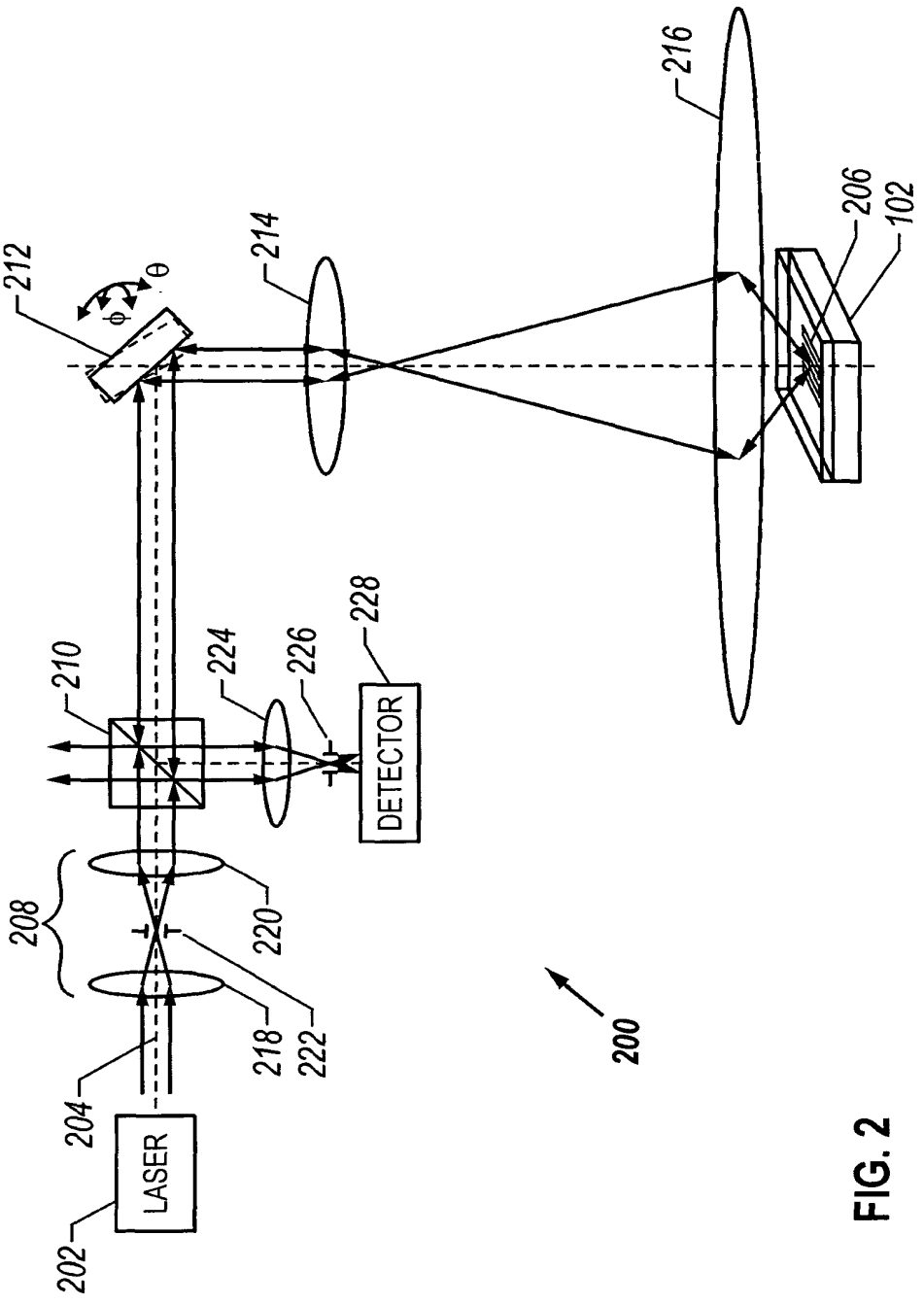
LASER
DETECTOR
202
204
208
210
212
214
216
218
220
222
224
226
228
206
102
200
θ
ϕ

FIG. 2

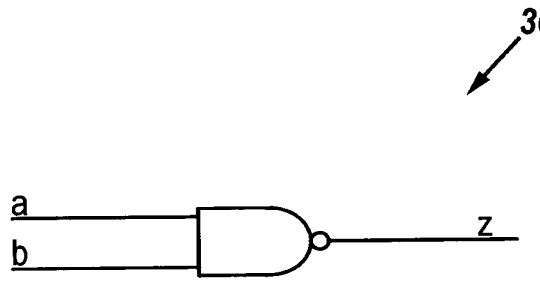
300
a
b
z

FIG. 3A

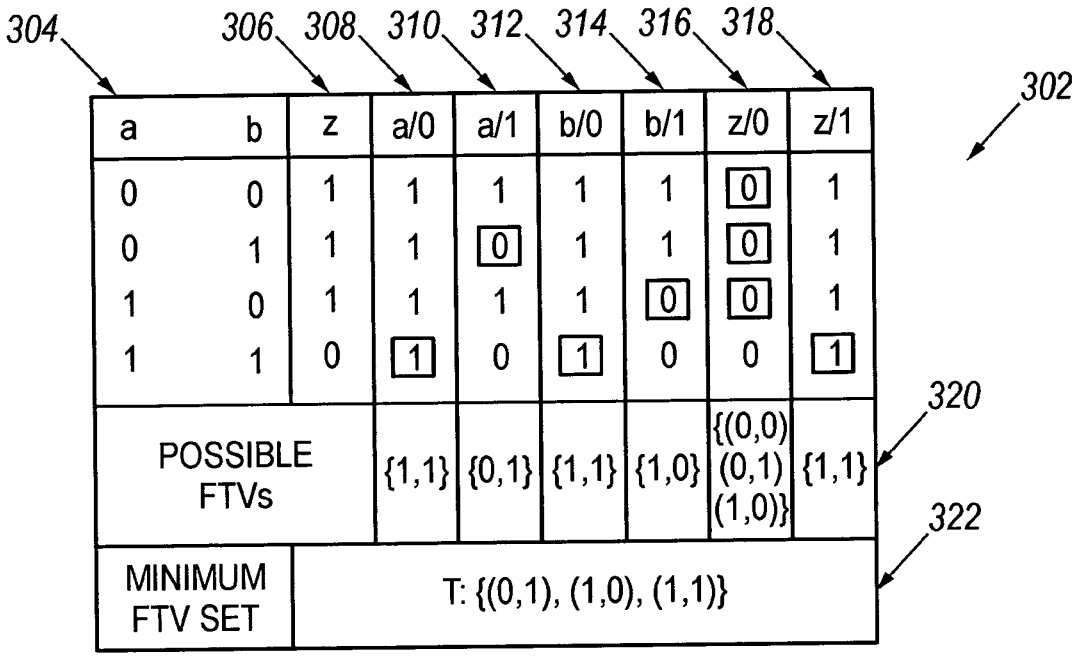
304
306
308
310
312
314
316
318
302
320
322
a
b
z
a/0
a/1
b/0
b/1
z/0
z/1
0 0 1 1 1 1 1 0 1
0 1 1 1 0 1 1 0 1
1 0 1 1 1 1 0 0 1
1 1 0 1 0 1 0 0 1
POSSIBLE FTVs
{1,1} {0,1} {1,1} {1,0} {(0,0) (0,1) (1,0)} {1,1}
MINIMUM FTV SET
T: {(0,1), (1,0), (1,1)}

FIG. 3B

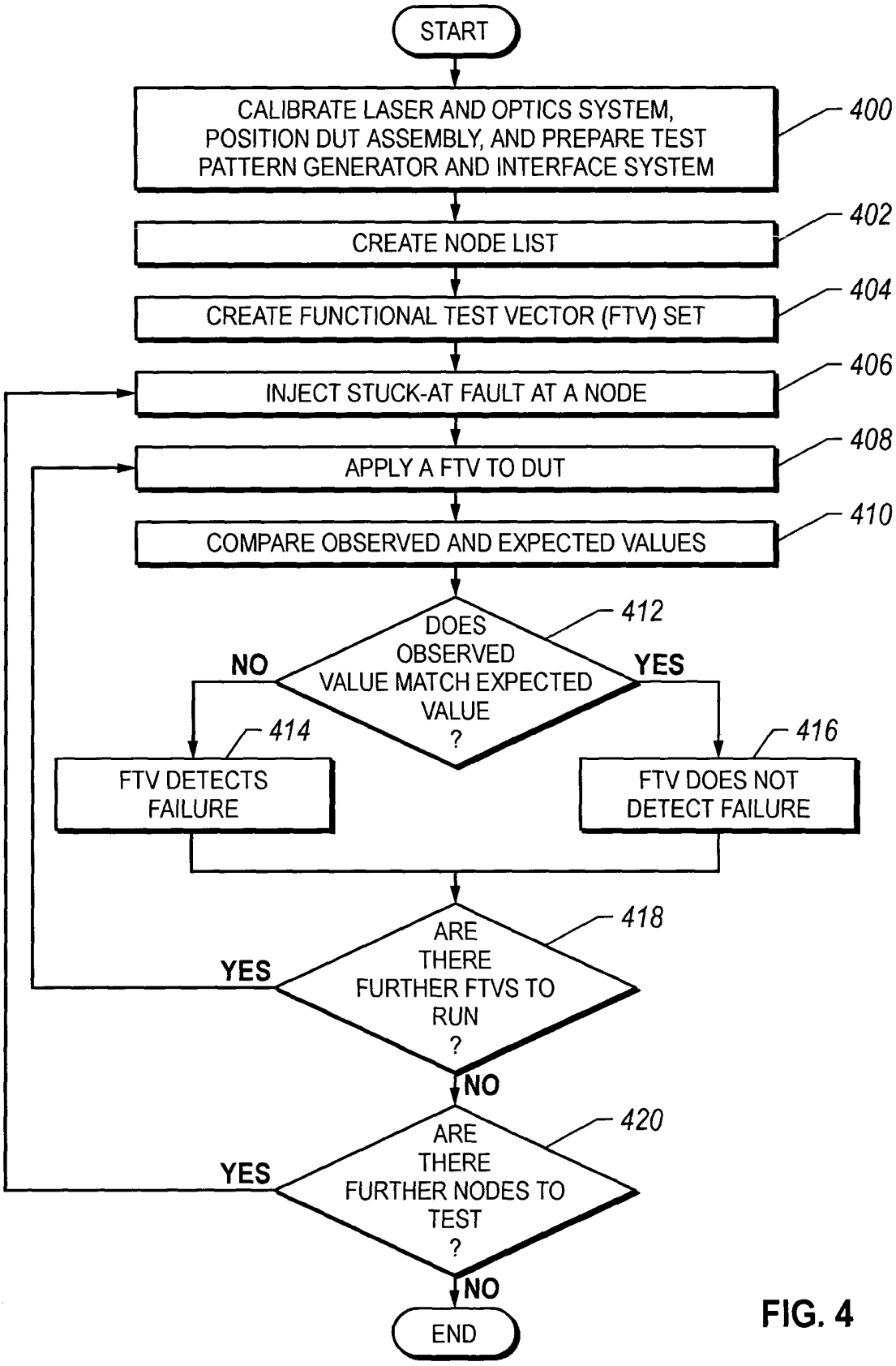
START
CALIBRATE LASER AND OPTICS SYSTEM, POSITION DUT ASSEMBLY, AND PREPARE TEST PATTERN GENERATOR AND INTERFACE SYSTEM
400
CREATE NODE LIST
402
CREATE FUNCTIONAL TEST VECTOR (FTV) SET
404
INJECT STUCK-AT FAULT AT A NODE
406
APPLY A FTV TO DUT
408
COMPARE OBSERVED AND EXPECTED VALUES
410
DOES OBSERVED VALUE MATCH EXPECTED VALUE ?
412
NO
YES
FTV DETECTS FAILURE
414
FTV DOES NOT DETECT FAILURE
416
ARE THERE FURTHER FTVS TO RUN ?
418
YES
NO
ARE THERE FURTHER NODES TO TEST ?
420
YES
NO
END

FIG. 4